

Interior Delta Flows and Other Factors

Questions:

- 1) What are the relationships between altered interior Delta flows and native fish survival, abundance, migration, spatial distribution, and life history diversity?
 - a) What important environmental cues for native fish are affected by altered flows and when are they important? At what temporal scale are the effects associated with altered flows realized?
 - b) What are the effects of altered interior Delta flows on other parts of the ecosystem such as phytoplankton, zooplankton, and benthos?
- 2) How do non-flow stressors such as predation, physical habitat, and water quality interact with flows?
- 3) What metrics of interior Delta flows are most useful to assess and manage hydrodynamic conditions and predict ecosystem impacts? For example, Old and Middle River reverse flows, net flow at Jersey Point (QWEST), and export-inflow ratios are currently used. Do these remain important metrics, or are there better metrics that could be used?
 - a) To what extent is the importance of environmental variability to specific fish species reflected in these metrics? Is there a need to more adequately address shorter-scale temporal variability within these metrics? Are the metrics sufficiently sensitive to how water is routed through the system? (refer to Baxter et al. 2012 - SWRCB Bay-Delta Independent Science Panel #2: Fish Resources; and Moyle et al. 2010 – SFEWS 8(3))
- 4) What changes to Delta hydrodynamics or other stressors would be most effective for reducing fish losses and other ecosystem impacts in the Delta? How could adaptive management experiments be used to improve prediction and management of ecosystem impacts? What other near term research activities could be implemented to address key knowledge gaps and make progress towards resolving scientific uncertainties and important areas of disagreement?